

# INNOVATION IN MOTION

**CURTISS-  
WRIGHT**

CURTISSWRIGHTDS.COM



+ Competencies + Services + Experiences

# FOCUSED ON CUSTOM DRIVE SOLUTIONS

Curtiss-Wright Drive Technology Switzerland is a global leader in the development and manufacture of electro-mechanical and electrohydraulic drive systems used in the industrial and defense industries for over 70 years. We provide both industries with comprehensive solutions for a variety of rugged applications, as well as a full portfolio of cost-effective engineering and support services.

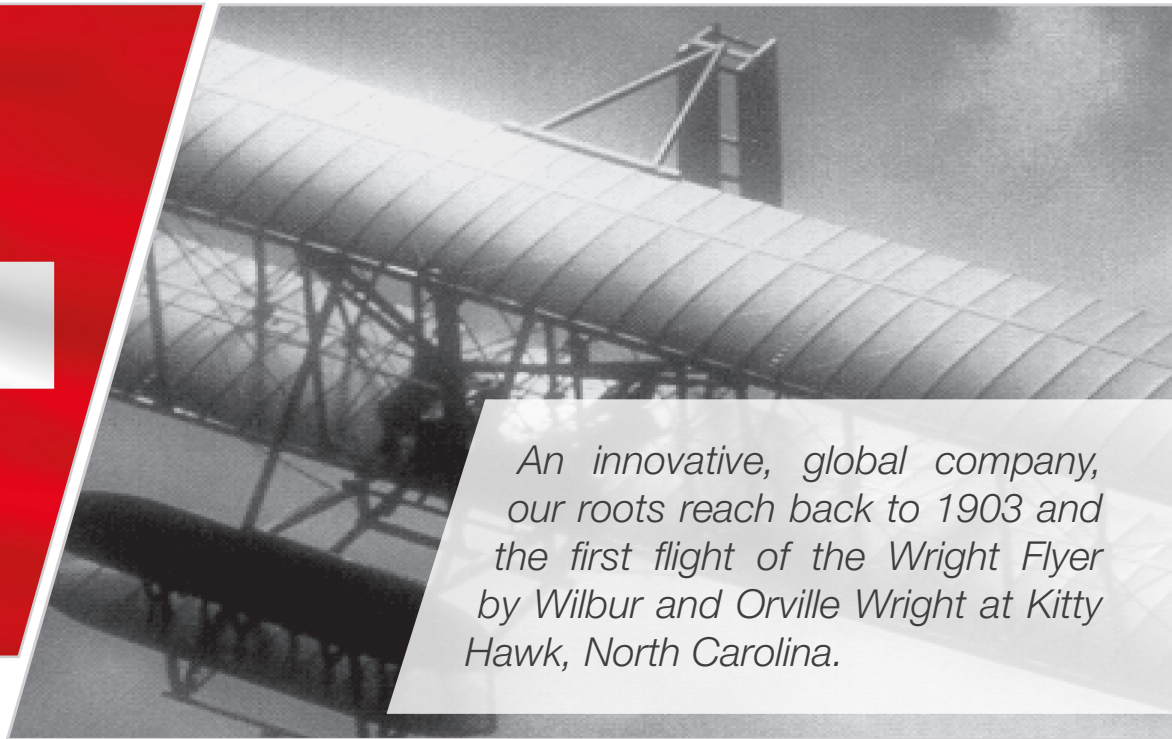
With a partnership approach to design and development, we deliver custom drive solutions for large and complex projects. Our goal is to offer a comprehensive all-in-one solution for every customer-specific requirement.

As a Swiss company, we stand for reliability and high-quality, which we receive through:

- / Highly qualified employees
- / Innovative thinking and actions based on company values
- / Technology-driven with state-of-the-art equipment
- / Close collaboration with spirit of trust with our customers

*Our offices in Neuhausen  
am Rheinfall, Switzerland.*





*An innovative, global company, our roots reach back to 1903 and the first flight of the Wright Flyer by Wilbur and Orville Wright at Kitty Hawk, North Carolina.*

## OUR ROOTS

Curtiss-Wright Corporation (NYSE:CW) is an innovative, global company that delivers highly engineered, critical function products and services to the commercial, industrial, defense, and energy markets.

The roots of Curtiss-Wright Corporation reach back to 1903 and the first flight of the Wright Flyer by Wilbur and Orville Wright at Kitty Hawk, N.C. With this flight by the Wright Aeronautical Corporation, the Wright brothers launched the aviation age.

Today, Curtiss-Wright provides reliable solutions through trusted customer relationships and employs approximately 8,400 people worldwide.

## A LEGACY OF INNOVATION

Curtiss-Wright Drive Technology is a part of Curtiss-Wright Defense Solutions since 1999.

Curtiss-Wright Defense Solutions is a division of Curtiss-Wright and a global leader in embedded computing and sophisticated electronic systems development. From commercial aerospace to air traffic control, medical, police, and transportation applications, Curtiss-Wright Defense Solutions COTS boards and systems are used worldwide in defense and industrial applications that require rugged, dependable solutions for the harshest environments.

Curtiss-Wright Defense Solutions is recognized around the world as one of the most innovative designers and manufacturers of rugged solutions built from the ground up to deliver optimal, reliable performance at sea, on the ground, in the air, or in space.

# OUR BUSINESS

Our global customer base includes leading companies in the defense industry, public transportation, film industry and food production. These diverse application areas and the related exchange of experience and know-how continuously lead to new ideas for creative and innovative product development.

We embrace unconventional thinking that will lead to unique applications of our solutions. We enjoy tackling new challenges, tasks, and industries that would benefit from our ability to deliver innovative drive solutions.



# THE FOUNDATION OF OUR SUCCESS - OUR EMPLOYEES

What makes a world-class organization? It all begins with core values that provide a strong foundation for success. Simple in theory, the values of Curtiss-Wright are reflected in every aspect of our operations.

We all take these values to heart in our relationships with our customers and each other.

- + Entrepreneurship
- + Efficiency
- + Reliability
- + Respect and Appreciation



## DEVELOPMENT PROCESS: V-MODEL

Our centralized quality and lean management guarantees our high quality products. This means, we approach your project in a structured and systematic manner. All of our internal processes are defined, ongoing validation of progress leads to project success.

High-quality standards are also achieved through the use of:

- + The latest sophisticated test equipment
- + Compliance to the Restriction of the use of certain Hazardous Substances directive (RoHS) and the regulation on Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH)
- + Model-based software development in accordance with EN 61508

Additionally, Curtiss-Wright Drive Technology is certified to ISO 9001:2008.

### STATE OF THE ART TECHNOLOGIES, FEATURES AND PROCESSES:

Dynamic Finite Element Analysis (FEA) support mechanical designs

Generic system software in accordance to EN 61508 & IEEE12207

Automated analysis of target system characteristic FFT

Inhouse electromagnetic interface (EMI) test chamber

Digital FIR-filtering, loop control for inertial stabilization

Fast embedded OS, high integrated FPGA design

Four quadrant power analysis - motor test bench

System emulation with stabilization test bench

3D system modeling and simulation

Built-in Test (BIT) and diagnostics

Reliability Verification Tests (RVT)

Shock and vibration analysis

Design for Test (DFT)

Inhouse paint shop

# SERVICES

The development of customer-specific drive solutions is our core skill. Our complete development approach includes engineering services for software, hardware, and drive systems.

In addition to engineering, we also offer complete support services:

- Program management
- Configuration management
- Drive integration and commissioning
- Technical consultancy
- Obsolescence management
- Integrated Logistic Support
  - + Analysis of Reliability, Availability, Maintainability, and Safety (RAMS)
  - + Logistic Support Analysis (LSA)
  - + Level of Repair Analysis (LORA)
  - + Staff training
- Customer Service
  - + Maintenance, Repair, and Overhaul (MRO)
  - + Spare parts
  - + 8D reporting



# OUR PRODUCTS

Curtiss-Wright Drive Technology offers following products:

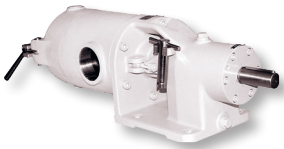
## Drive Systems product range / customizable:

Each product or system can be configured to meet specific requirements

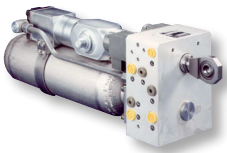
### Typical electromechanical drive system:



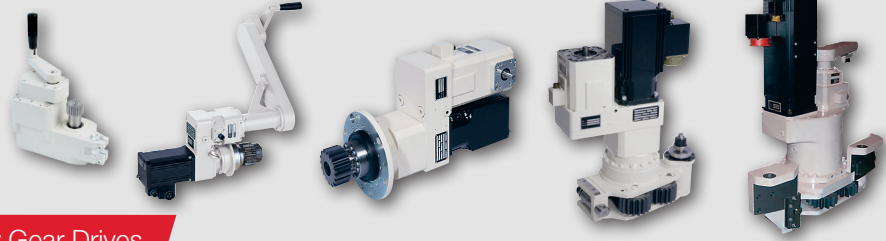
### High-viscosity Screw Pumps



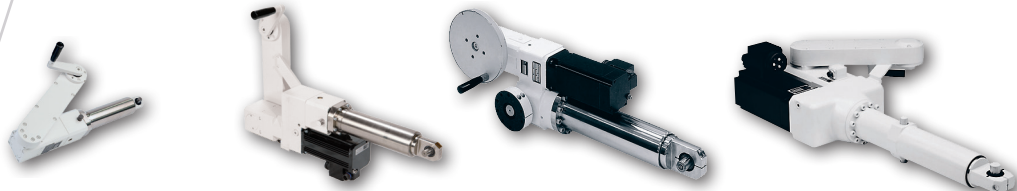
### Flick Rammer Drives



### Rotary Gear Drives



### Linear Gear Drives



### Motor Controllers



### Hand Controllers



### Gyroscopes





# INDUSTRIAL PRODUCTS

Curtiss-Wright Drive Technology offers solutions for the most challenging industrial applications.

## Train Tilting Technology

One of our highly engineered solutions is an electromechanical tilting drive system, which is used to improve passenger comfort on high-speed trains around the world. With this system, train cars traveling at high speed are tilted at an angle of  $\pm 8^\circ$  while in motion around curves to maintain stability in the passenger compartment. The system's highly engineered, precision tilting technology enables exceptionally responsive tilting that produces smooth car body movements, which are virtually imperceptible in a passenger compartment.

## Camera Crane Stabilization

The same innovative approach to solving train tilting has been applied to making movies easier to film. Our gyro-stabilized, remote-controlled camera crane stabilization system allows cinematographers and directors to get their cameras into the action and provide a steady shooting platform, even in the bumpiest environments. The stabilized camera can steady shots at speeds up to 120 km/h and a velocity range of 0.01 to 700°/sec. This enables filmmakers to capture amazing car chases and action scenes in any environment.

## High-Viscosity Screw Pump

Products dispersed with our high-viscosity screw pump melt on the tongue!

We offer the ideal solution for dispersing paste-like mediums at high pressure, such as a chocolate mixture, fat, licorice, oil, or syrup. For these requirements, our unique pump rotor design enables a constant and exceptional medium flow. The high-viscosity screw pump is distinguished by an extraordinary endurance, which customers have appreciated for decades — especially in the chocolate industry.



## DEFENSE APPLICATIONS

Curtiss-Wright Drive Technology provides complete, customizable solutions engineered to provide reliable, cost-effective systems for rugged defense platforms.

### *Ammunition Feeding Systems*

Our ammunition feeding system is based on extensive experience in the development and application of advanced technologies and state-of-the-art production for the defense industry. The system provides the highest degree of safety, precision, quality, and reliability for ammunition feeding applications. It is engineered to control multi-axis on a variety of platforms, including main battle tanks, mortars, and howitzers.

### *Flick Rammer Drives*

Our state-of-the-art, electrohydraulic flick ramming systems are recognized in the artillery industry for their high reliability, operational availability, and low life cycle cost. These semi-automatic and fully automatic loading systems meet the customers need for more reliable and cost-effective weapon systems and provide a high performance rate of fire for a variety of howitzer platforms.

### *Rapid Direct Drive Servo Systems*

An active protection system is a system designed to prevent line-of-sight guided anti-tank missiles/projectiles from acquiring and/or destroying a target. Curtiss-Wright direct drive systems can be customized for high speed applications for vehicle protection systems.

### *Launcher Systems*

Anti-Tank guided missile launchers or directed energy systems can be mounted with Curtiss-Wright Drive Systems. Customized developments will guarantee the optimum required size, weight and performance with life cycle optimized costs.

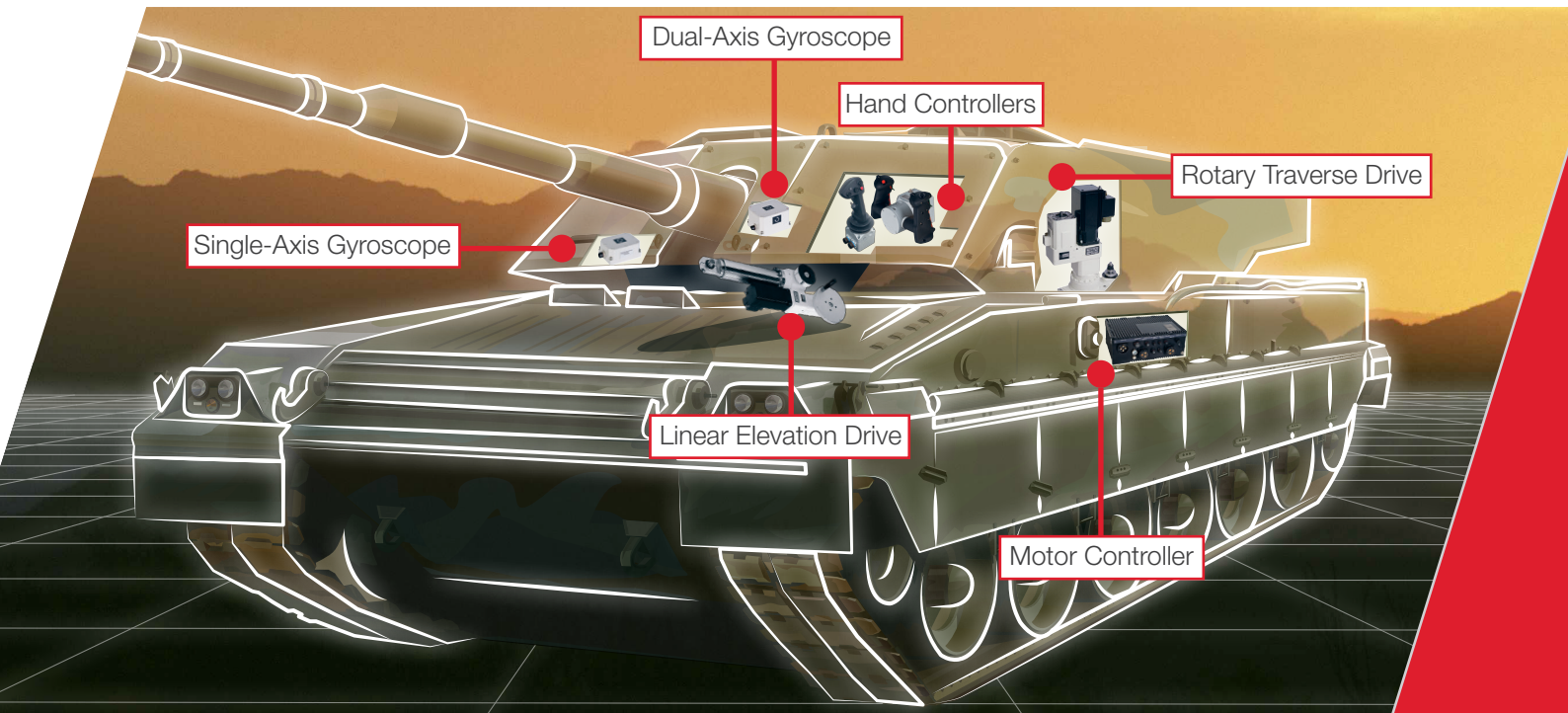


# DEFENSE APPLICATIONS

Modern armored land vehicles are a critical component for any operation on today's battlefield. To be effective, these platforms must be able to accurately locate a target and stabilize a shot while in motion.

## Turret Aiming and Stabilization Drive Systems

Our modular Turret Drive Servo System (TDSS) is available in three standard configurations or can be completely customized: These standard configurations can be configured and customized to meet the needs of any platform and provide an easy upgrade path from a lower-cost solution to a fully stabilized system. This approach significantly reduces the time and cost associated with developing and defining subsystem requirements for aiming and stabilization. It enables system integrators to jump-start a program, speed development, and get a complete, integrated system to demo and production faster.





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## Sales & Technical Support

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